

Serial No. 10/657,874

RD-29,557-4

LISTING of CLAIMS

1-12. (Canceled)

13. (Currently amended) An article cleaning apparatus comprising:an air management mechanism;a cleaning basket assembly;a fluid regeneration device;a working fluid device coupled to said fluid regeneration device, said cleaning basket assembly, and said air management mechanism;a clean fluid device coupled to said cleaning basket assembly and said fluid regeneration device;a controller coupled to said air management mechanism, said cleaning basket assembly, said working fluid device, said regeneration device, and said clean fluid device; wherein said controller is configured to control a cleaning process, including at least a solvent cleaning process, wherein said solvent cleaning process utilizes a solvent based cleaning fluid comprising cyclic siloxane solvent; andaA spectroscopic solvent vapor sensor coupled to the controller for identifying siloxane solvent vapor, wherein the sensor comprisescomprising:an infrared source to generate infrared radiation; andan infrared sensor, ~~the infrared sensor~~ adapted to be selectively responsive to siloxane absorbance of infrared radiation having wavelengths in a near or mid-infrared range.

14. (Canceled)

15. (Currently amended) An article cleaning apparatus comprising:an air management mechanism;a cleaning basket assembly;a fluid regeneration device;

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a working fluid device coupled to said fluid regeneration device, said cleaning basket assembly, and said air management mechanism, a clean fluid device coupled to said cleaning basket assembly and said fluid regeneration device;

a controller coupled to said air management mechanism, said cleaning basket assembly, said working fluid device, said regeneration device, and said clean fluid device; wherein said controller is configured to control a cleaning process, including at least a solvent cleaning process, wherein said solvent cleaning process utilizes a solvent based cleaning fluid comprising cyclic siloxane solvent; and

aA piezo-based solvent vapor sensor coupled to the controller for identifying siloxane solvent vapor, wherein the sensor comprisescomprising:

a quartz crystal microbalance element including a transducer film that selectively absorbs the siloxane solvent vapor.

16. (Currently amended) The article cleaning apparatus solvent-vapor sensor of claim 15 wherein said transducer film comprises a non-polar polymer.

17. (Currently amended) The article cleaning apparatus solvent-vapor sensor of claim 16 wherein said transducer film comprises a hydrocarbon chain.

18. (Currently amended) An article cleaning apparatus comprising:
an air management mechanism;
a cleaning basket assembly;
a fluid regeneration device;
a working fluid device coupled to said fluid regeneration device, said cleaning basket assembly, and said air management mechanism, a clean fluid device coupled to said cleaning basket assembly and said fluid regeneration device;

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a controller coupled to said air management mechanism, said cleaning basket assembly, said working fluid device, said regeneration device, and said clean fluid device; wherein said controller is configured to control a cleaning process, including at least a solvent cleaning process, wherein said solvent cleaning process utilizes a solvent based cleaning fluid comprising cyclic siloxane solvent; and

aA strain based solvent vapor sensor for identifying siloxane solvent vapor, wherein the sensor comprises~~comprising:~~

a piezo-resistive circuit; and

a sensing element coupled to the piezo-resistive circuit ~~and, the sensing element~~ including a transducer film.

19. (Currently amended) The article cleaning apparatus ~~strain-based solvent vapor sensor~~ of claim 18 wherein said transducer film comprises a non-polar polymer.

20. (Currently amended) The article cleaning apparatus ~~strain-based solvent vapor sensor~~ of claim 18 wherein said transducer film comprises a hydrocarbon chain.

21. (Canceled)

22. (Currently amended) The article cleaning apparatus ~~spectroscopic solvent vapor~~ of claim 13, wherein the infrared sensor is responsive to siloxane absorbance of infrared radiation having wavelengths between about 2300nm and about 2500nm.

23. (Currently amended) The article cleaning apparatus ~~spectroscopic solvent vapor~~ of claim 13, wherein the infrared sensor is responsive to siloxane absorbance of infrared radiation having wavelengths of about 9200nm.